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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,055	03/31/2004	Takashi Nakamura	251299US2	4869

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EXAMINER	
WILLIS, RANDAL L	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
01/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/813,055	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Randal Willis	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6,12-14,20 and 23-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20 and 23-28* is/are allowed.

6)☒ Claim(s) *6 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 October 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to amendments in application No. 10/813055 filed 10/5/2007. Claims 6,12-14 and 20-28 are pending and have been examined.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

3. Claims 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

4. Claims 20, 23-28 are allowed

Claim Rejections - 35 USC § 112

Claims 12 and 13 recites the limitation "said virtual image pickup detector" when no such mention of a virtual image pickup detector has been stated in claim 6 which they depend upon. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 6 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Yanof (2004/0085458) and Makinouchi (2004/0204060).

Apropos claim 6, Ogawa teaches:

A display device, comprising:

a pixel array unit having display elements (pixel 14, Fig. 2) formed in vicinity of intersections of signal lines (22, Fig. 2) and scanning lines (23, Fig. 2) disposed in length and breadth, image pickup units (photodiode 25, Fig 2) and an output unit which outputs binary data corresponding to image picked up by said image pickup unit (A/D converter 36, Fig. 2);

a display controller IC which embeds said first image processing unit and supplies digital pixel data for said pixel array unit to said pixel array unit (Control 71, Fig. 2 and Col 10 line 65-68).

pixel array unit is formed on an insulation substrate using TFTs (Thin Film Transistors) (glass 12, Fig. 4 with TFT's 27, Fig. 4 and 5);

a termporary storage capable of storing image pickup data of said image pickup unit for three horizontal lines (35b, Fig. 2, each color of display would be recorded and temporarily stored before being output, thus over one cycle three lines of data would have been stored Col 12 lines 23-26 and Col 5 lines 44-50).

However Ogawa fails to explicitly teach:

a first image processing unit configured to generate multiple gradation data based on multiple binary data picked up by said image pickup units based on multiple image pickup conditions ; and

a second image processing unit configured to receive either the image pickup data picked up by said image pickup device or the multiple gradation data generated by said first image processing unit, to conduct a prescribed image processing.

first image processing unit is a semiconductor chip.

In the same field of image capturing Yanof teaches a digital imaging system that first processes gradation data in an Automatic exposure control circuit (132 Fig. 1 [0025]). Yanof also teaches other processes that receive the image picked up by the digital imaging device as performs further processing such as color interpolation or

gamma correction (140 and 144, Fig. 1). With the image processing unit being fabricated on a silicone chip ([0024]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to supply image processing units to generate gradation data and gamma correct etc as taught by Yanof in the image capture device of Ogawa in order to capture higher quality images ([0013]).

Ogawa and Yanof both fail to explicitly teach:

a image pickup device provided separate from said image pickup unit;

In the same field of devices with liquid crystal displays, Makinouchi teaches a cellular phone that has a camera and a liquid crystal display [0019].

Therefore it would have been obvious at the time of the invention to use the liquid crystal display as taught by Ogawa in the cellular phone taught by Makinouchi in order to provide a communications device that can take facial images and still provide high density document scanning.

Apropos Claim 12 Ogawa teaches:

The display device according to claim 6, wherein said virtual image pickup detector averages the four image pickup data, to calculate the central image data (Col 8 lines 30-36).

8. Claims 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (6,243,069) in view of Choi (6,791,520).

Apropos claim 14, Ogawa teaches:

A display device, comprising:

display devices in pixels (pixel 14, Fig. 2) formed in vicinity of intersections of signal lines (22, Fig. 2) and scanning lines (23, Fig. 2) disposed in length and breadth;

image pickup units (photodiode 25, Fig 2), at least one of said image pickup units being provided corresponding to each pixel (See Fig. 2 one photodiode 25 per pixel 14), and each conducting image pickup at a prescribed range;

binary data storages (Line memory 36, Fig. 2) which store binary data corresponding to results of image picked up by said image pickup unit (Col 12 lines 23-25); and

an insulation substrate on which said display elements, said image pick up units and said binary data storages are formed (Insulator 12, Fig. 5);

a backlight device capable of alternately illuminating lights of white, green and blue (backlight comprises red, green and blue which can be used to make white light, Fig. 13), said backlight device being disposed on back face (Fig. 13).

However Ogawa fails to explicitly teach:

an averaging gradation estimation unit configured to estimate an averaging gradation of whole display screen based on the binary data of the pixels connected to a portion of the scanning lines which do not neighbor to each other.

Wherein said averaging gradation estimation unit estimates averaging gradation based on the binary data picked up by said image pickup unit with respect to illumination colors of said backlight device.

In the same field of Liquid crystal displays, Choi teaches a method of measuring designated points across a display surface and calculating the average luminance thereof (Col 6 lines 13-15).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have an average luminance estimation unit as taught by Choi in the liquid crystal display device of Ogawa, that would average the image each time it was recorded by the different luminance of Ogawa, in order to detect image sticking defects and luminance change ratios of the display (Col 5 line 54-55).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randal Willis whose telephone number is 571-270-1461. The examiner can normally be reached on Monday to Thursday, 8am to 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RLW

AMR A. AWAD
SUPERVISORY PATENT EXAMINER